

**San José State University**  
**College of Social Science, Department of Urban and Regional Planning, CRN # 49828 -**  
**GEOG135 Research Methods in Geography, CRN # 49829 - GEOG290 Seminar in**  
**Research Design in GIS, Fall 2021**

**Course and Contact Information**

Instructor:	Kerry Rohrmeier, PhD
Office Location:	WSQ 113A (Geospatial Lab Office)
Telephone:	(408) 924-5475, but email yields a faster response
Email:	<a href="mailto:kerry.rohrmeier@sjsu.edu">kerry.rohrmeier@sjsu.edu</a>
Office Hours:	Mondays 3:00-4:00 pm on Zoom at <a href="https://us02web.zoom.us/j/83118200989">https://us02web.zoom.us/j/83118200989</a> and by appointment :
Class Days/Time:	Mondays 7:30-10:15 pm
Classroom:	Refer to the course schedule Synchronous meetings on Zoom at <a href="https://us02web.zoom.us/j/89287807733">https://us02web.zoom.us/j/89287807733</a> Asynchronous coursework is on Canvas Optional in person sessions will be in WSQ111

**Course Format**

This course is Mode 11 which means the class is offered online with two meeting patterns; the first is online with designated day/time and the second meeting pattern is online with no designated day/time (TBA). Both patterns have occasional on-campus meetings. In our designated day/times we will engage with many active learning exercises while asynchronous activities can be worked on independently while the module is open. All course resources are found on the GEOG135/GEOG290 [Canvas](#) webpage using your 9-digit SJSU ID and password. You are responsible for regularly checking Canvas for the latest information and communication.

**Course Description**

From the university catalog:

- GEOG 135. Development of skills required for quantitative and qualitative geographical research addressing diverse geographic problems. [3 units]
- GEOG 290. Introduction to research in Geographic Information Science. Includes definition of research problems, design of research project, identification of appropriate methodologies for acquiring, organizing and analyzing data, and presentation of research results. Research paper. Satisfies GVAR: Graduation Writing Assessment Requirement. [3 units]

**Course Learning Outcomes (CLO)**

Upon successful completion of this course, students will be able to:

- CLO 1 *Define and apply basic geographic tools and techniques.*

Students will demonstrate understanding through weekly written assignments and the term studio project. These exercises involve writing, literature research, data collection, and cartographic skills.

- CLO 2 *Demonstrate the ability to define a research problem and design and execute a research program.* All course assignments plus the final sourcing, reading, and analytical techniques to support each geography student's research problem and program.
- CLO 3 *Demonstrate the ability to communicate research results in professional written, graphic, and verbal form.*

Students will present their specific research through written assignments, presentations, and display charts, graphs, and maps each week.

- CLO 4 *Demonstrate understanding of how geographic research and geotechnology may be applied to a variety of problems.*

Students will consider how data can be visualized in ArcGIS, ArcPro, ArcGIS Online, open-source platforms, or other software for problem solving.

## Required Texts/Readings

No textbook is required for this course. Weekly readings and multimedia content will be posted to weekly Canvas modules.

## Supplemental Texts

Firebaugh, G. 2008. *Seven Rules for Social Research*. Princeton, NJ: Princeton University Press.

Gatrell, J., G. Bierly, and R. Jensen. 2012. *Research Design and Proposal Writing in Spatial Science, 2<sup>nd</sup> Edition*. Berlin: Springer-Verlag.

Montello, D. and P. Sutton. 2013. *An Introduction to Scientific Research Methods in Geography & Environmental Studies, 2<sup>nd</sup> Edition*. Thousand Oaks: Sage.

## Technology Requirements

ArcGIS Online 'AGOL' is required for the course. ArcPro Desktop software is also encouraged for those having access to a PC (note, this software does not run on a Mac computer). You may use your SJSU sign on to use AGOL at <https://sjsugis.maps.arcgis.com/home/index.html>

## Course Requirements and Assignments

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities. This course includes:

- 1) Active participation in this course is mandatory and is especially important for once weekly courses (CLO1).
- 2) There are 14 assignments ranging from preparing an annotated bibliography, synthesizing a research question, designing appropriate research methods, and working with GIS and graphics software (CLO1 and CLO2).
- 3) The midterm exam is a written essay demonstrating your understanding of the knowledge gap between geographic theory and practice including a discussion of how this divide pertains your research team's project (CLO1 and CLO2).

## Final (CLO2, CLO3 & CLO4)

Part 1) Background Research – All students will prepare a 3,000-word literature review on a research topic of interest discussed in context of three pertinent lines of research (each line of research will need at least 20 peer-reviewed, scholarly sources) for a total of at least 60 sources for the literature review.

Part 2) Collaboration – Students have been paired and will assist one another in a mentor-mentee process akin to Principal Investigator (PI) and Research Assistant roles typical of academic research projects. Each undergraduate student will work with a graduate student. The graduate student should help guide and review the undergraduate student’s written submission. The undergraduate student will in turn help the graduate student find relevant GIS data to support research and written submission.

Part 3) Written Submission – Following the literature review each undergraduate student and advanced certificate student will synthesize compiled scholarly information into a concise 750-word ‘Research Statement’ needed for application into a graduate program. This research statement will demonstrate mastery of a chosen research topic and propose how the prospective research will extend knowledge on the topic. New MA Geography graduate students will synthesize the literature review into a formal 750-word ‘Research Proposal’. Returning graduate students making progress on their research will include the literature review into a draft Introduction chapter.

All student writing will include a word count and the required word counts are exclusive of titles, TOC/TOF, figures, tables, and/or appendices. All written work should be properly cited and formatted to meet submission guidelines of the American Association of Geographer - Chicago 15<sup>th</sup> edition in times new roman 12-point font with 1” margins on all sides.

Part 4) Every student will give a concise but formal 5-minute presentation highlighting the arc of their research progress this semester and concluding with next steps.

### Extra Credit

There is an opportunity to collect data for Mosaic America at its inaugural festival on September 25<sup>th</sup>. Learn more at <https://mosaicamerica.org/festival/>. Volunteering will earn 40-points.

### Grading Information

Grades are determined on a points-based scale and include +/- grades. All students have the right, within a reasonable timeframe, to know their academic scores, to review their graded work, and to be provided with explanations for the determination of their course grades. In keeping with this policy, and to help ensure that grading is responsive, all assignments are due as stated on the Course Schedule and Canvas. **Late work is not accepted in this course.** Please save all your work until after you have checked your final course grade. Then if you have questions about your final grade, you can bring in past work, and if necessary, corrections can be made.

	Points Possible
Participation on Zoom	100
14 Assignments	240 (40 each)
Midterm	60
Final	100
<b>TOTAL</b>	<b>500</b>
<i>Extra Credit: Data Collection for Mosaic America</i>	40

### SCALE:

A plus = ≥98 %	A = 94-97%	A minus = 90-93%
B plus = 87-89%	B = 84-86%	B minus = 80-83%
C plus = 77-79%	C = 74-76%	C minus = 70-73%
D plus = 67-69%	D = 60-66%	D minus = 51-59%
		F = ≤50%

## Classroom Protocol

- Attendance is mandatory and on-time online arrival is polite practice.
- All preparatory readings and assignments must be completed prior to our Zoom exercises.
- Plagiarism in any form is unacceptable and will merit a 0 for the assignment.
- This course involves working in pairs frequently, so civility and courteousness are always expected. While we may not agree with other perspectives or approaches stated, respect is mandatory.

## University Policies

### General Expectations, Rights and Responsibilities of the Student

As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU's policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. See [University Policy S90-5](http://www.sjsu.edu/senate/docs/S90-5.pdf) at <http://www.sjsu.edu/senate/docs/S90-5.pdf>. More detailed information on a variety of related topics is available in the [SJSU catalog](http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html), at <http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html>. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not serve to address the issue, it is recommended that the student contact the Department Chair as a next step.

### Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's [Catalog Policies](http://info.sjsu.edu/static/catalog/policies.html) section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines can be found on the current academic year calendars document on the [Academic Calendars webpage](http://www.sjsu.edu/provost/services/academic_calendars/) at [http://www.sjsu.edu/provost/services/academic\\_calendars/](http://www.sjsu.edu/provost/services/academic_calendars/). The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at <http://www.sjsu.edu/advising/>.

### Consent for Recording of Class and Public Sharing of Instructor Material

[University Policy S12-7](http://www.sjsu.edu/senate/docs/S12-7.pdf), <http://www.sjsu.edu/senate/docs/S12-7.pdf>, requires students to obtain instructor's permission to record the course and the following items to be included in the syllabus:

- “Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”
  - A written request granting permission may be submitted in writing for the whole semester or on a class-by-class basis.
  - In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.
- “Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.”

### **Academic integrity**

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The [University Academic Integrity Policy S07-2](http://www.sjsu.edu/senate/docs/S07-2.pdf) at <http://www.sjsu.edu/senate/docs/S07-2.pdf> requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website](http://www.sjsu.edu/studentconduct/) is available at <http://www.sjsu.edu/studentconduct/>.

### **Campus Policy in Compliance with the American Disabilities Act**

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. [Presidential Directive 97-03](http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) at [http://www.sjsu.edu/president/docs/directives/PD\\_1997-03.pdf](http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) requires that students with disabilities requesting accommodations must register with the [Accessible Education Center](http://www.sjsu.edu/aec) (AEC) at <http://www.sjsu.edu/aec> to establish a record of their disability.

## GEOG135 / GEOG290, Fall 2021 Course Schedule

This subject to change with fair notice, please check Canvas regularly for course announcements.

### Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	8/23 Zoom	<p>GETTING STARTED</p> <p>Syllabus Setting Course Expectations Research Interests and backgrounds Introductions Teams</p> <p>Read:</p> <ul style="list-style-type: none"> <li>• Nietschmann, Bernard. (2001). Nietschmann syllabus: A vision of the field. <i>The Geographical Review</i> 91(1/2) 175-184.</li> <li>• Katz, Cindi. (1994). Playing the field: Questions of fieldwork in geography. <i>Professional Geographer</i> 46(1) 67-72.</li> <li>• de Vaus, David. 2001. <i>Research Design in Social Research</i>. SAGE. <a href="http://www.nyu.edu/classes/bkg/methods/005847ch1.pdf">http://www.nyu.edu/classes/bkg/methods/005847ch1.pdf</a></li> </ul> <p>Assignment 1: Hone your broader research interest into a single research question.</p>
2	8/30 Zoom	<p>RESEARCH DESIGN</p> <p>Crafting research. Question Participatory GIS as a tool Academic Productivity – venues, journals, conferences Selecting the right approach</p> <p>Guest Speaker: Dr. Laxmi Ramasubramanian, Chair of the Department of Urban and Regional Planning Chair</p> <p>Read:</p> <ul style="list-style-type: none"> <li>• USC Libraries Research Guide. 25 Jan 2017. Types of Research Design. <a href="http://libguides.usc.edu/writingguide/researchdesigns">http://libguides.usc.edu/writingguide/researchdesigns</a></li> <li>• <a href="#">Pages 35-48</a>: Booth et al. (1995). <i>The Craft of Research</i>. University of Chicago Press, Chicago.</li> </ul> <p>Assignment 2: Identify two methods you believe best answer your stated research question and discuss the pros and cons in a table. Identify which method is best.</p>
3	9/6	LABOR DAY HOLIDAY – NO CLASS

Week	Date	Topics, Readings, Assignments, Deadlines
4	9/13 Zoom	<p>QUALITATIVE RESEARCH</p> <p>Social science research on power, access, identity Storytelling with GIS</p> <p>Guest Speakers, Usha Srinivasen and Mallika Srinivsen, Mosaic America Dr. Rohrmeier Research Agenda Journals, Conferences, Rankings Focus Group Surveys Oral Histories Interviews</p> <p>Read:</p> <ul style="list-style-type: none"> <li>• Campbell, Lisa M., et al. (2008) Gatekeepers and keymasters: Dynamic relationships of access in geographical fieldwork. <i>The Geographical Review</i> 98(1): 97-121.</li> <li>• ‘Semi-structured interviews’: <a href="#">University of Oregon Methods Wiki</a></li> <li>• Tillmann-Healy, Lisa M. (2003) Friendship as method. <i>Qualitative Inquiry</i> 9: 729-749.</li> <li>• Dowler, Lorraine. (2001). The four square laundry: Participant observation in a war zone. <i>The Geographical Review</i>. 91(1/2) 414-422.</li> </ul> <p>Assignment 3:</p> <ul style="list-style-type: none"> <li>• Write an abstract for an intended conference</li> <li>• Select the journal you consider to be the best fit for your research and write a cover letter to the editor explaining why your proposed manuscript is a perfect contribution to this publication.</li> <li>•</li> </ul>
5	9/20 Zoom	<p>ETHICS</p> <p>Spatial Data Science Guest speaker, Dr. Ahoura Zandiatashbar Institutional Research Board</p> <p>Read:</p> <ul style="list-style-type: none"> <li>• Schoenberger, E. (1991). The corporate interview as a research method in economic geography. <i>Professional Geographer</i> 43(2) 180-189.</li> <li>• Sigma Xi. 1999. <i>The Responsible Researcher</i>. <a href="https://www.sigmaxi.org/docs/default-source/Programs-Documents/Ethics-and-Research/responsible-researcher.pdf?sfvrsn=2">https://www.sigmaxi.org/docs/default-source/Programs-Documents/Ethics-and-Research/responsible-researcher.pdf?sfvrsn=2</a></li> <li>• <a href="#">AAG Statement on ethics</a></li> <li>• SJSU IRB Policies then <a href="#">Complete CITI Training</a></li> </ul> <p>Assignment 4: Attend the 9/24 SAVI Speaker Series. Live on Zoom or recorded</p>

Week	Date	Topics, Readings, Assignments, Deadlines
		<p>Assignment 5: Work with your research team to complete the SJSU IRB application and required supplementary materials based on the graduate researcher's project interest. If you have a project where IRB approval absolutely does not apply, then add a mock component to the project where IRB would get triggered (such as personal interviews).</p> <p>Extra credit: Collect survey data at the Mosaic America festival from 10:30 am-5:00 pm at the School of Arts and Culture, 1700 Alum Rock Ave, San Jose, CA 95116</p>
6	9/27 Zoom	<p>LITERATURE REVIEW</p> <p>Remote sensing research Guest speaker, Dr. Bo Yang Peer review, Citation scores, journal rankings, H-index What is meant by three lines of research Bibliography management software</p> <p>Read:</p> <ul style="list-style-type: none"> <li>• Rose, Gillian. (2014). On the relation between “visual research methods” and contemporary visual culture. <i>The Sociological Review</i> 62(1) 24-46.</li> <li>• <a href="#">Ch 12</a>: Turner, Sarah (2013). The silenced research assistant speaks her mind. <i>Red Stamps and Gold Stars: Fieldwork Dilemmas in Upland Socialist Asia</i>. UBC Press, Vancouver.</li> </ul> <p>Assignment 6:</p> <ul style="list-style-type: none"> <li>• Part A) Prepare a bibliography with at least 60 scholarly sources for your final. Use proper citation format as if it were a submission to the <i>Annals of the AAG</i> (Chicago 15<sup>th</sup> Ed). After each bibliographic entry you need to paste the source abstract or introductory paragraph.</li> <li>• Part B) Submit evidence of scholarly article downloads by compiling them into an organized folder on your hard drive and paste a screenshot of the folder contents in list format.</li> </ul>
7	10/4 Canvas	<p>MIDTERM EXAM</p> <p>Write a 750-word essay discussing the differences between theoretical study and field research as it pertains to understanding place, and why both are important methods for effective geographic research. Citations from assigned readings will be needed to support this essay.</p>
8	10/11 Zoom	<p>GIS DATA EXPLORATION</p> <p>Determining the appropriate scale Data availability and generalization Using social explorer Accessing open GIS data portals</p>

Week	Date	Topics, Readings, Assignments, Deadlines
		<p>Read:</p> <ul style="list-style-type: none"> <li>• <a href="#">26-29</a> Evaluating Data: Lindsay, James M. (1997). <i>Techniques in Human Geography</i>. Routledge, London.</li> <li>• Philip, L.J. (1998). Combining quantitative and qualitative approaches to social research in geography – an impossible mixture? <i>Environment and Planning A</i> 30(2) 261-276.</li> </ul> <p>Assignment 7: Work in your research team to:</p> <ul style="list-style-type: none"> <li>• Part A) List all the GIS data layers you found on your research topic and create a source list identifying content creator, data format (images, rasters, tables, .shp, .gdp, .mxd), metadata description, and link to the file location. Then download it, package it into an organized folder, and submit a screenshot of the listed file content: 20 sources minimum.</li> <li>• Part B) Submit a list of data layers still needed along with a short statement for each describing why you need this information (in other words what gap does this fill). 10 sources minimum.</li> <li>• Part C) Make a preliminary map of the data collected using cartographic conventions</li> </ul>
9	10/18 Zoom	<p>GIS LAB DAY 1</p> <p>Cartography review  Color Brewer <a href="http://colorbrewer2.org/#type=sequential&amp;scheme=BuGn&amp;n=3">http://colorbrewer2.org/#type=sequential&amp;scheme=BuGn&amp;n=3</a>  Choosing the right GIS spatial analysis tools and deciding what order to apply them  Automating this workflow</p> <p>Assignment 8: Conducting spatial analysis research using new tools on data gathered in Assignment 7 to create a map with results. Craft step-by-step instructions of the methods used.</p>
10	10/25 Zoom	<p>GIS LAB DAY II</p> <p>Now create a teaching lab exercise based on the GIS methods used in Assignment 8.</p> <p>Assignment 9: Perform your research teammates lab exercise. Critique its repeatability, results, and map. What edits should be made to troubleshoot errors?</p>
11	11/1 Zoom	<p>COMMUNICATE</p> <p>Watch: Marshall, Melissa. 2012. TED Global: Talk Nerdy to Me <a href="https://www.ted.com/talks/melissa_marshall_talk_nerdy_to_me">https://www.ted.com/talks/melissa_marshall_talk_nerdy_to_me</a></p> <p>Assignment 10: MA geography students will at some point present their research findings at a professional conference. This a 15-minute talk covering</p>

Week	Date	Topics, Readings, Assignments, Deadlines
		<p>current research, the methods, and ultimately the findings. As practice MA geography students will present key literature on their research topics. Close with a statement of how you believe your research can extend this existing body of knowledge. All other students (undergraduates and advanced certificate students) will provide written feedback to each presenter a Google Form survey with open-ended commentary.</p>
12	11/8 Zoom	<p><b>GRAPHIC DESIGN</b></p> <p>Flowcharts Venn Diagrams Infographics Word clouds Charts, Graphs, and Tables</p> <p>Pictures are worth 1,000 words! Research methods sections can be really challenging and boring so visualize step-by-step workflows or data results as art.</p> <p>Assignment 11: Communicate your research method as a flowchart or graphic. Explain software tool(s) used to create something so spectacular.</p>
13	11/15 In person or Canvas	<p><b>GEOGRAPHY AWARENESS WEEK &amp; GIS DAY</b></p> <p>Read: Gropen, G.G and Judith Swan. Nov-Dec 1990. The science of scientific writing. <i>American Scientist</i> <a href="http://www.americanscientist.org/issues/pub/the-science-of-scientific-writing">http://www.americanscientist.org/issues/pub/the-science-of-scientific-writing</a></p> <p>Assignment 12: Attend at least one TBA department and discipline event celebrating geography awareness week and/or GIS Day</p> <p>Start Assignment 13: Writing the final manuscript</p>
14	11/22 Canvas	<p><b>KEEP WRITING</b></p> <p>Read</p> <ul style="list-style-type: none"> <li>• <a href="#">Part VI-End</a>: Geertz, Clifford. (1973). Thick description: Toward an interpretive theory of culture. <i>The Interpretation of Cultures</i>. Basic Books, New York</li> <li>• <a href="#">Intro</a>: Barnes, Trevor and James Duncan. (1992) <i>Writing Worlds: Discourse, Text and Metaphor in the Representation of Landscape</i>. Routledge, London.</li> </ul> <p>Finish assignment 13: Submit your manuscript to Canvas. Submissions will then be placed in a Canvas folder where everyone has access</p>

Week	Date	Topics, Readings, Assignments, Deadlines
15	11/29 Zoom	<p>PEER REVIEW</p> <p>The publishing processes Multiple authors vs a single PI White papers Books Self-publishing Copyright Story Maps</p> <p>Assignment 14: You will be assigned peer reviewers to read and edit your manuscript. Feedback from at least two reviewers is required before a final manuscript may be submitted to Canvas. Reviewers are graded based on nitpicking the manuscript's readability and identifying holes in the chosen research design and methods. Vague or glossed-over commentary by any reviewer will result in the reviewer receiving a low grade on this assignment because it is a disservice to the editorial process and to the author's original contribution. Each reviewer must use track changes.</p>
16	12/6 Zoom	<p>REVISION</p> <p>When to hire an editor Meet with your reviewers to address feedback Make changes Create a cover letter explaining how peer reviewer feedback was addressed in the final manuscript</p>
Final	12/13 In person or Zoom	<p>PUBLISH &amp; PRESENT</p> <p><b>All students will submit their written final on Canvas.</b></p> <p>Student presentation (Part 4) of the final will occur during the final session.</p>

### Research Teams

Graduate Student Researcher	Undergraduate Research Assistant
Christopher Brady	Gavin Felder
Shane Fields	Cian Sheahan
Layo Freed	Veronica Bardhan
John Garcia	William Lee
Adam Hall	Aaron Sanders
Tiffany Martinez	Melanie Morales
Thu My Tran	Takion Nakamura
Krysta Plummer	Estrella Martinez
Brendan Miller	Yuli Carabantes
Japuji Sahib	Julian Wootan